



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

SOME DESIRABLE GOVERNMENTAL POLICIES FOR RIVER IMPROVEMENT

WM. W. HARTS

There are probably few students of economics who will not readily concede that the prosperity of mankind and the progress of civilization depend in no small degree on the facility of communication. The products of the mine, of the farm, and of the factory all require markets; and practically everything used by the average city dweller pays its tribute to this form of industry. The wonderful commercial development in all parts of the world during the past hundred years, probably exceeding in this particular the progress of all previous recorded time, may be said to date from the application of steam as a propelling power, and the use of the electric telegraph. These two agencies alone, in their various methods of application, have increased the facilities of communication beyond the most liberal belief of a century ago, and have contributed enormously to this unprecedented commercial growth.

Many nations have recognized the public importance of this principle, and have accepted as part of their governmental policies some provision for aiding the freer communication between their parts. As an instance, the importance of the Suez Canal as a connecting link in the communication between England and India was seen to be such that England could not safely leave it to the control of any other nation. Its management, therefore, was secured by the British nation as a public policy. Other instances abound. The subsidies to the merchant marine of Japan and England, the state-owned and state-aided railways of France and Germany, the development of the canals and waterways of Holland and Germany, and the public highways of Switzerland and Italy, all show how widely the principle of aiding transportation at public expense has been admitted to be desirable, if not necessary, as a governmental policy.

In the United States the development of our natural resources, unparalleled elsewhere in the world, has been largely stimulated by an enormous railway expansion. With us, as with other nations, the principle of governmental aid to transportation lines was early recognized as a means of accelerating commercial

growth. Almost from the time of the formation of the federal government large sums were spent for national post roads; but about 1832, when the first locomotive was successfully operated, the expenditures in this direction became fewer and finally ceased. Later, the government's helping hand was similarly extended to the railroads, and their construction was fostered in various ways. The transcontinental railways were thereby enabled to build their lines connecting the interior of the country with the Pacific Coast. They were financially assisted by a guaranty of their bonds, and extensive grants of public lands were made to them by the government. So important were these steps that it seems safe to say that but for aids so conferred the growth of the Pacific Coast region would still be more than a generation behind.

Among the early instances of governmental aid in this country were the river improvements, the need for which was forced upon the attention of the public through the impetus given river commerce by the successful operation of boats propelled by steam. In the period of time that has since intervened, our interior rivers, as means of communication, have passed through many vicissitudes. Since the days before the railways, when they were important lines of transportation and were filled with vessels and freight, their fortunes have gradually changed. Their importance has often dwindled, and their usefulness has been reduced, until now the longest river in the world, the one having in its present condition perhaps a greater transporting power than any other, is flowing almost idly into the Gulf of Mexico. And this has occurred, notwithstanding the fact that this river passes through a country not excelled anywhere for the fertility of its soil and the industry and energy of its people.

As early as 1830 the government took steps toward the improvement of some of our inland streams. Under President Jackson a board of army engineers designed works for increasing the depths and lessening the dangers on the Tennessee and Cumberland rivers. Grants of public land were made to various states to aid the works of this kind, and surveys for new projects were occasionally made at public expense. Some of these projected works were later completed by the states of Tennessee and Alabama, but were badly hampered by the financial panic of 1837, and were finally abandoned on the approach of the Civil War. For a few years thereafter the work done was desultory in character, but about 1870 the present practice of appropriating

federal funds for river betterment began to be recognized as a public policy. This met with great objection at first at the hands of those advocates of "States' Rights" who insisted on leaving such work to the states and localities directly benefited; but little by little the practice of federal improvement became more settled, growing up by gradual steps from very modest beginnings to its present extensive scale.

The occasional urgency of some improvement at an isolated place where a small expenditure would result in a comparatively large benefit was the usual reason put forward in the early years for appropriations for local necessities. Small local projects were thus often undertaken without any regard to the effect at other places or the relative importance of the locality. This method was soon firmly established as an adopted rule of practice, and in this way a lack of coördination in river work arose. The political opportunities afforded in this connection soon became apparent, and a new and powerful reason was perceived for the continuance of the system. The activity of the representatives of the people in certain sections was actually thought at one time to be measured by their success in securing new work for their districts; but the prevalence of this idea has been largely reduced in late years. There seems to be still some degree of personal triumph in obtaining appropriations for their localities, although the relative necessity therefor may be clear. Even with these disadvantages, however, works of enormous value have been accomplished, in spite of their local and independent nature. Instances are numerous. The Louisville and Portland Canal around the falls of the Ohio River, the canal and locks around the rapids of the St. Mary's River, the pools created on the Ohio River near Pittsburg, and the locks in the Monongahela, have all justified their cost many times over by the public benefit derived.

But notwithstanding the large amounts expended on many of our streams and the excellent facilities frequently afforded, there are few that do not show a decline of commerce in recent years; although for a time the improvements made seemed to cause a promising growth. Various reasons are given for this decline, such as the increased efficiency of railways, the aggressiveness of labor combinations that hamper river navigation at inopportune times, the lack of experienced river pilots (owing to the greater attractions of other vocations), and the absence of sufficient and

suitable terminal facilities. Before discussing any desirable governmental policies for river betterment, the main causes leading to this diminution of commerce should be definitely presented.

A casual observation of the various methods of communication shows at once that the decline of river traffic has kept pace, to a marked degree, with the growing development of railways. This coincidence ought therefore to be scrutinized. It may even appear on first examination that the function of rivers is to be entirely supplanted in time by rail transportation, and that further steps to aid river traffic will be rendered useless. This has been frequently asserted by enthusiastic railroad advocates, and is worthy of careful attention. They state that in the economic race the railways, by their many advantages, have so far distanced the rivers that no hope remains of ever making the latter sufficiently useful to warrant the cost of their improvement for navigation.

It is stated that since 1837 freight rates have fallen from $7\frac{1}{3}$ cents per ton mile to $7\frac{1}{2}$ mills per ton mile, or to about one tenth of the early cost. This rapid reduction gave a great advantage to the rail lines, and the possibility of the transshipment of cars from one line to another and the ease of making extensions and sidings were additional favorable features that tended to cause freight to seek this means of reaching its destination.

It seems clear that if the influence of rail transportation on river traffic could be always defended solely on an economic basis, the usefulness of most of our rivers would soon diminish to insignificance. But a closer examination of the relationship discloses methods that have been adopted by the railroads which seem unfair to river navigation, and strongly indicate a fear of successful competition. These doubtful methods have often been alluded to, and include the reduction of railroad rates between competing points to a figure below the cost of either river or rail transportation, so that boats cannot run at a profit and are then abandoned. In such cases railroads have been allowed under the law to recoup their losses by increased charges to non-competitive points—a measure not equally possible to river boats.

On some rivers, also, lines of steamboats have been temporarily established by the railroads themselves, operated at ruinous rates for a time, and then withdrawn after the competition of independent boat lines had been silenced. The possibility of such action, it is said, has at times been held up as a threat by rail-

road interests in order to suppress incipient competition. It is reported that even now on the lower Tennessee River no cotton may be carried by a boat beyond the first railway crossing it encounters, without danger of retaliation. Railroads are also known to have purchased stock in boat companies, presumably to control their activities; and in many other ways they have unintentionally admitted the formidableness of their river rivals. All these devious means of putting an end to water competition are encouraging, in a way, to those who are interested in the development of our waterways; for they show to what lengths the railroads will be willing to go to prevent encroachments on their business. They are, after all, silent witnesses to the effectiveness of river competition.

In some foreign countries the rail rates are maintained by their laws at a point somewhere above the river rates, in order to encourage river traffic. Probably no rule could ever be applied here such as is adopted in Germany, where rail rates are said to be kept purposely about 20 per cent above river rates; but in all fairness the least that one could expect in this country is such governmental control of the practice of the railways as will prevent unjust discrimination in rates against the river, whereby a powerful company may crush its weaker but often effective competitor.

In order that capital may invest in any enterprise, there must be reasonable security and a fair chance of profit. Until the river transportation business can be protected against unfair competition, so that investors may not thereby be forced out of their projects, there will be little hope of rebuilding the river traffic.

For these reasons the first governmental policy I would suggest would be *closer railroad regulation*. Whether this would be sufficient to enable a rejuvenation to take place in river affairs is still a matter of uncertainty, but as a preliminary step it seems indispensable. Certainly nothing of much importance can be accomplished without it. There are indications that the cost of railroad transportation is nearing its minimum, and that the facilities for rail haul are growing less and less able to meet the growing requirements of the country. It seems only reasonable, therefore, to expect that certain classes of bulky freight will turn more and more to the rivers in the future, and that the necessities of the country will require greater service from them.

Rivers should therefore have a fair chance to justify their care, without favor and on economic grounds alone; and those that do not survive this test should be abandoned in favor of the more efficient carriers.

It is believed by many who have watched the unequal contest between rail and river that when the day shall arrive (not now far distant, it is hoped) on which unjust competition shall be ended, the railroads will find in their search for increased efficiency that the rivers are their greatest friends, whose cheap carrying power they cannot overlook. Already some steps in this direction have been taken. The increase of traffic through the St. Mary's River of late years has largely resulted from the development of lake transportation under the supervision of the railroads. Should this same interest some day extend to our rivers, we shall again see our streams busy with freight.

The local and often disconnected character of river work in the past, even when it has underlying it an inseparable and intimate relationship, has already been mentioned as being a disadvantage. My second desirable governmental policy is *greater coördination of work*.

In the early days of government aid to our rivers many projects of merit were undertaken, and were carried along by appropriations made every few years. As conditions changed from time to time the sums appropriated for each varied, the amounts often being dependent on the state of the country's finances and often on the local pressure with which the work was urged. It thus happened that completion was seldom provided for in the beginning, but only a continuation of improvement; and years were sometimes consumed in doing a work of several seasons. If large enough sums were provided, contracts were usually let; but in every case when the funds were exhausted the progress of the work was arrested until another act could supply more money. These periodical delays were often enough to more than neutralize all the efforts of the engineers toward economy, and frequently disheartened those citizens who were interested in the project as a business enterprise. There seems no doubt among those accustomed to good business methods that any engineering construction when once determined upon should be finished or guaranteed all the funds necessary to push it to completion. Otherwise there is inevitable loss in the idle invested capital and in deterioration of the structures. This disconnected method of

carrying on our river work was followed for many years, and is still the rule for many projects. But in the course of time considerable dissatisfaction with the delay in the execution of some adopted projects arose among the people of the localities to be benefited, and many engineers publicly discussed the wasteful methods in vogue. The delays could not be ascribed to the engineers or to the high cost of the work, but rather to the disadvantages arising from the methods of supplying funds.

At length, however, improved methods were determined on, under which many of the causes of dissatisfaction could be obviated. The first step toward a new dispensation was the adoption of what is known as the "counting-contract system." By this system a work can be carried forward through several years under a single contract, the appropriations being made at proper times, each in an annual bill; the total being kept within an authorized sum. In this way, instead of waiting for the usual river appropriations, contracts can be let for the full amount of the authorization, although the act making provision therefor may appropriate only a small part of the total in immediately available funds. This was the first step, and an important one, toward the better coördination of work.

A new plan under which annual instead of biennial appropriations will be made is now proposed. This will be another great assistance, if consistently followed, and will prevent many delays.

But these improvements did not change the practice of adopting local projects based on local needs. Each proposed plan was examined and reported on, and if finally adopted was executed more or less independently of its relationship to other parts of the system. Nearly all the rivers of the interior part of this country are tributary to one trunk stream, and as such are to some extent interrelated. To enable boats to be easily transferred from one river to another, the depths of channels and width and length of locks should in some measure correspond, in order that streams belonging to the same system and possessing similar physical characteristics may afford easy interchange of boats.

Until recently there has never been an official body charged with the duty of testing the relative necessities of connecting streams in advance of the adoption of projects for federal improvement. Furthermore, our navigable streams vary widely in importance, and there has been no authorized way of arranging

them in proper order so that the most useful should receive the earliest attention. Sometimes tributaries were selected for improvement before the trunk stream was ready, and less worthy streams were occasionally provided for in advance of more useful ones. The manifest defects of such a method became more and more apparent as the volume of work grew, and finally of necessity led to another important step in the direction of better co-ordination. This was the provision in 1902 for a Board of Engineers for Rivers and Harbors, which was to sit as a board of review and report on the projects submitted to it from the local districts in obedience to legislative directions. This at last gave some measure of coördination, and was one of the most important steps ever taken by the government in the history of this class of work. Now a single body can view the entire system and correlate its parts, whenever a river project is examined under governmental direction. The board can test the worthiness and relative importance of each project and determine the necessities of the stream, all in relation to the needs of the country as a whole. It may withhold approval if not found to meet its tests, or modify previous recommendations in order to bring the proposed project to its own proper rank.

But an important provision is still lacking. This board can not propose new works or arrange a plan of execution beyond what is submitted to it. It resembles a court which can decide a case only when duly presented, but cannot initiate any action of its own. It would appear to be in the direction of progress to endow this board with more ample powers; and it does not seem a vain prophecy to predict that this will eventually be done, if only by degrees.

There has been a demand among those interested in this class of work for a comprehensive plan of construction applicable over the whole interior of the country. Here is the means, already at hand. There have been criticisms that no new plans can be presented for government adoption which will be so designed as to keep all the system in harmony. Here is the organization, ready for instructions.

The second policy, therefore, that I would suggest is greater co-ordination of projects, to be secured by enlarging from time to time the functions and responsibility of the present duly constituted river and harbor board, to enable it to prepare a comprehensive plan of improvement of all our navigable rivers, having

due regard to their present needs and prospective usefulness; to suggest the more worthy streams for earliest work, to arrange the distribution of available funds within such limits that those works once begun may be completed within a reasonable time, and to see to it that the less important shall wait until the more useful ones are earning suitable dividends for the public by accommodating an adequate volume of traffic.

This body should also be expected to propose new work and new lines of investigation and experiment, and should be endowed with all the vigor and initiative necessary thereto. It should be required to present to Congress periodically a list of new works to be undertaken, together with a studied scheme of construction that would give the best and quickest returns for the money expended. This method of solving a difficult problem will probably not be satisfactory to those who desire a new organization, such as the establishment of some bureau of public works, or a complete upheaval of present methods; but it presents the advantage of being ready and trustworthy, requiring no new adjustment of duties, but only an amplification of authority; not revolutionary, but in the direction of present development; economical, and on the whole worthy of a trial whenever the present plans are to be improved.

The third policy which is suggested herein is *coöperation*. By coöperation is not meant the loose partnerships between the government and private individuals or corporations which so often result in one-sided benefits, but it intends an assistance on the part of the communities and localities to be benefited, in order to render more useful the channels constructed by the government. Coöperation may be tendered in many ways and many works are now being carried on with the financial assistance of the state, city, or home community. But reference is made here to only one class of coöperation; one that is usually the most necessary, that is, that involving the construction of terminals, landings, and warehouses.

It has often been asserted that an important reason for some river work was the temporary prosperity induced by the large expenditure of money in the vicinity. Some have also said that the reduction in freight rates on the competing railroads was the main object to be accomplished by these expensive structures; but all must finally admit that unless the improved *waterway* comes to be used enough for river traffic to pay back to the public

a benefit equivalent to a reasonable dividend on the investment, the work will be an economic failure. Channel development must rely mainly on its usefulness to the public as a means to easier or cheaper transportation, or it cannot long receive popular support.

The government in its efforts for easier communication is concerned primarily with channels, but landings are equally necessary if the channels are to be used. Rivers must have transfer facilities for exchanging freight with rail lines or other rivers, storage facilities and warehouses must be provided, and some efficient means of loading and unloading vessels must be furnished to complete the work. Local communities can cooperate in this, and can demonstrate at the same time their sincerity in their demands for governmental aid. They can cooperate with the government by constructing or providing for terminals. A channel without terminals is like a railroad without sidings or freight yards. An engineering periodical recently stated that the terminal charges against railroad freight between Philadelphia and New York were fourteen times the cost of transportation alone, and that the terminal charges at Chicago and New York about equaled the cost of transportation between these cities. The enormous importance of this feature as an element of rail freight cost is generally recognized, but its bearing on river improvement is only just beginning to be understood. The construction of terminal facilities has not yet been undertaken by the government, and may never be; but without terminals and adequate landings much of the money spent on channels is wasted.

It was hoped that when good river channels were provided suitable terminals would immediately follow, but this has been true only in a few instances. The early method of making landings almost anywhere along the stream to pick up freight or put it ashore has passed; for the delay and expense of handling freight up and down steep banks and the lack of security and shelter without warehouses, are disadvantages that weigh heavily against the river. It seems hardly necessary to insist that towns should build and equip terminals and warehouses in advance of any possibility of their use, but they can at least purchase water frontage and definitely promise aid to anyone who will construct greater facilities whenever they may be needed. Assurances of meeting these requirements when they arise can be given. Even with these facilities provided, some public organization is nec-

essary, and some public control of the water fronts indispensable to prevent adverse ownership of the landings by corporations or private individuals who may desire to limit the use of the river in their own interests. Frequently railroads secure all the water frontage they can in order to be in strategic control of the freight situation, and individuals often charge excessive rates for their own profit. In addition to channels, then, we must not only have loading and transfer facilities, but must also have some port organization to enable the public to use their facilities on reasonable terms.

In order to accomplish this coöperation, a very simple means presents itself. This is to make the adoption of a project by the government and the expenditure thereon of public money contingent on the construction of adequate terminal, landing, and transferring facilities by the local interests benefited, or on some satisfactory assurances of the local bodies that such facilities will be provided, open to the public on reasonable and equal terms. Some localities have already provided free landing places. Nashville and Chattanooga, Tennessee, have each public landing wharves, practically free, and Cincinnati has a paved bank for river boats; but an examination of the landings on the Ohio River and several of the tributaries disclose the fact that nearly all water frontage in the principal river towns is owned or controlled by the railroads.

In the report of the Commissioner of Corporations on transportation by water in the United States, 1910, the following is found:

"Probably the greatest deterrent to water terminal advance is the present adverse attitude of the rail lines toward independent water traffic, in their exclusive control of frontage, in refusal or neglect to coördinate with general water traffic, and in refusal to prorate generally with water lines in through movement of traffic. Until this underlying relation of rail to water systems is adjusted on some common sense basis of harmony, there is little hope of great advance in water terminal conditions."

If, however, the localities would provide for landings, and have some port organization to protect river commerce, they will coöperate to a considerable extent in providing facilities for navigation, and this adverse attitude of the railroads would soon be of small importance. It is believed that the government should insist on this coöperation among the local organizations as a

condition precedent to government work, in order to be assured that the terminal question should be at least partially solved before undertaking new projects.

To summarize, therefore, the three suggestions presented for consideration as desirable governmental policies are as follows:

1. Closer railroad regulation, to protect river traffic from unfair competition and improper control.

2. Greater coördination of work, by giving greater power and responsibility to the present river and harbor board that it may provide for a comprehensive plan of river improvement, and for coördinating its different works in such a plan.

3. Greater coöperation on the part of the localities; more particularly directed at first to requiring them to provide for terminal, loading, and transfer facilities.

In submitting these three suggestions there will be found nothing impossible of attainment, or even impracticable. There is nothing proposed that has not already been adopted in a measure and, in fact, these suggested policies are only logical extensions of steps already taken.